

Serial No. 10/659,805
Docket ITW 0006 IA/41038.9/14350

REMARKS

Claims 1-46 were pending in the present application. Claim 9 has been amended, and new claims 47-54 have been added. As a result of this amendment, claims 1-54 are pending. Reexamination and reconsideration are requested in light of the accompanying amendments and remarks.

Claim 9 has been amended to correct a typographical error. This amendment has been made for purposes of clarity and for no other reason. This amendment does not narrow the claim.

Paragraph [0024] has been amended to identify that the internally flexibilized epoxy resin Araldite PY 322 is a butylated Bisphenol A epoxy resin, as shown in the attached Material Safety Data Sheets (MSDS). Araldite PY 322, Araldite XB 4122 and Araldite PY 4122 are the same compound. It was developed by Ciba Geigy Corp., and originally had the designation XB 4122 in the MSDS in 1986 and 1988 (X stands for experimental). The name appears as Araldite PY 322 in the MSDS issued in 1994. It appears again as XB 4122 in 1997. After Vantico took over Ciba Geigy's epoxy business in 2000, the name appears as PY 4122. Vantico is now part of Huntsman, and the product is listed by Huntsman as PY 4122. No new matter has been added.

The rejection of claims 1, 2, 9, 20, 22, 24-26, and 34 under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Logan (U.S. Patent No. 3,892,684) is respectfully traversed. Logan discloses a composition for producing clear, cured epoxy resins. The clear resin is produced by forming a precondensate between a 1,500 to 2,500 molecular weight triepoxide flexibilizer and a curing agent capable of curing an epoxy resin at room temperature, mixing the precondensate at room temperature with a base resin, and curing the mixture at room temperature.

The examiner stated that Logan shows "a resin component comprising a mixture of epoxy resin and an internally flexibilized epoxy resin (col. 3, lines 16-29; col. 5, lines 18-23)." However, contrary to the examiner's position, Logan does not disclose the use of a resin component comprising a mixture of epoxy resin and an internally flexibilized epoxy resin. Logan merely shows the use of a base resin; there is no internally flexibilized epoxy resin in the

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resin component. Col. 3, lines 16-29 shows various epoxy resins that can be used as the base resin, none of which is an internally flexibilized epoxy resin. Col. 5, lines 18-23 states:

Other flexibilizers and plasticizers including flexible epoxy resins, epoxy resins derived from aliphatic acids, hydroxyl-terminated flexibilizers, natural and synthetic rubbers, and resinous modifiers such as vinyl resins, polyester resins, etc. may also be incorporated into the compositions. *Such additives, if used, are normally incorporated into the composition at the time the precondensate is mixed with the epoxy resin base, although they can, if desired, be incorporated into the precondensate.*

These additives are not mixed with the base resin; they are either mixed with the precondensate or else mixed in when the base resin and precondensate are mixed together. Therefore, Logan does not teach or suggest a resin component comprising a mixture of epoxy resin and an internally flexibilized epoxy resin.

Furthermore, Logan does not teach or suggest a two-part epoxy adhesive in which the cured adhesive has a tensile elongation at room temperature of greater than 30%, as claimed. The examiner stated that "the property limitations of claims 1, 20, and 24 would appear to be inherent of the composition of Logan because he satisfies all of the material limitations of the claimed composition, and it has been found that a chemical composition and its properties are inseparable." However, as demonstrated above, Logan does not teach the same composition. Moreover, the % elongation of the compositions of Logan ranges from 2.6 % to 9.5%. See Tables at cols. 7-8.

As to claim 2, Logan does not teach or suggest a two-part epoxy adhesive having an initial cure time of less than 3 hours as claimed. Logan teaches that "[r]oom temperature curing normally takes *from about 3 hours to about 7 days*." Col. 4, lines 23-24.

As to claim 9, Logan does not teach or suggest a resin component free of nonylphenol and a hardener component free of nonylphenol. The examiner cited col. 2, line 10 through col. 3, line 63 for support. However, Logan makes no mention of the components being free of nonylphenol there or anywhere else.

As to claims 20 and 22, Logan does not teach or suggest a two-part epoxy in which the reactive mixture of the resin component and the hardener component has an initial cure time of

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about 1.5 to 2 hours and a tensile elongation after curing of greater than 120%, or a tensile elongation after curing of greater than 80%. As discussed above, the resin component in Logan is not the same as the claimed resin component. Moreover, the curing time in Logan is from about 3 hours to about 7 days, and the elongation is less than 10%.

Therefore, claims 1, 2, 9, 20, 22, 24-26, and 34 are not anticipated by, and they would not have been obvious to one of ordinary skill in the art at the time the invention was made over Logan.

The rejection of claims 3-5, 7, 10, 12, 14, 17, 27-29, 31, 35, 37, 44, and 45 under 35 U.S.C. § 103(a) as being unpatentable over Logan in view of Marten (U.S. Patent No. 5,459,208) is respectfully traversed. Marten is cited as teaching that "accelerators, thixotropic agents, and coupling agents, along with plasticizers and fillers are recognized in the art as customary additives for flexible epoxy resin compositions." However, Marten does not remedy the deficiencies of Logan.

Therefore, claims 3-5, 7, 10, 12, 14, 17, 27-29, 31, 35, 37, 44, and 45 would not have been obvious to one of ordinary skill in the art at the time the invention was made over Logan in view of Marten.

New claims 47-54 have been added. Support for the new claims is found in paragraphs [0024] and [0031]. As discussed above, Logan does not disclose the use of an internally flexibilized epoxy resin in a mixture with an epoxy resin. As Logan does not teach or suggest the use of any internally flexibilized epoxy resin, it does not teach or suggest the use of internally flexibilized bisphenol A type epoxy resins or internally flexibilized bisphenol F type epoxy resins, nor does it teach or suggest the use of butylated bisphenol A epoxy resins. In addition, Logan does not teach or suggest the use of butadiene acrylonitrile flexibilizers, or amine terminated butadiene acrylonitrile flexibilizers in the hardener component.

Applicant gratefully acknowledges the examiner's statement that claims 6, 8, 11, 13, 15, 16, 18, 19, 21, 23, 30, 32, 33, 36, 38-43, and 46 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, this was not necessary in light of the arguments presented.

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CONCLUSION

Applicant respectfully submits that, in view of the above amendment and remarks, the application is now in condition for allowance. Applicant respectfully requests that claims 1-54 be passed to allowance.

If the Examiner has any questions or comments regarding the present application, he is invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,
DINSMORE & SHOHL LLP

By Patricia L. Prior
Patricia L. Prior
Registration No. 33,758

One Dayton Centre
One South Main Street, Suite 1300
Dayton, Ohio 45402-2023
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NOV. 9. 2005 2:59PM ITW DEVCON

NO. 0496 P. 2/8

SAFETY DATA SHEET
according to applicable EC directive**HUNTSMAN****Ident-No: ARALDITE PY 4122 US**Version 1
Revision Date 12.04.2005

Print Date 13.04.2005

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING**Product Information**

Trade name : ARALDITE PY 4122 US

Company : Huntsman Advanced Materials (Europe) BVBA
Eversteun 45
3078 Everberg / Belgium

Telephone : +41618681599
Telefax : +41618681599
Emergency telephone : +41 61 868 40 00 (In France ORFILA : +33(0)145425959)
number

2. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

Butylated epoxy resin

CAS-No. : 71033-08-4

Hazardous components

Chemical Name	CAS-No.	Symbol(s)	R-phrases	Concentration [%]
butylated epoxy resin	71033-08-4	Xi	R36/38 R43	<= 100.00

3. HAZARDS IDENTIFICATION

Irritating to eyes and skin.
May cause sensitization by skin contact

4. FIRST AID MEASURES

Inhalation : Move to fresh air.
If symptoms persist, call a physician.

Eye contact : Rinse immediately with plenty of water for at least 15 minutes.
If eye irritation persists, consult a specialist.

Skin contact : Wash off with soap and plenty of water.
If skin irritation persists, call a physician.

Ingestion : Immediately give plenty of water (if possible charcoal slurry).
If a person vomits when lying on his back, place him in the recovery position.
Oxygen or artificial respiration if needed.
Do not induce vomiting.

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NO. 0496 P. 3/8

SAFETY DATA SHEET
according to applicable EC directive**HUNTSMAN****Ident-No: ARALDITE PY 4122 US**Version 7
Revision Date 12.04.2005

Print Date 13.04.2005

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media** : Water spray.
Carbon dioxide (CO2).
Foam.
Dry powder.
- Extinguishing media which must not be used for safety reasons** : High volume water jet.
- Special protective equipment for fire-fighters** : Wear self-contained breathing apparatus and protective suit.
- Further information** : Burning produces obnoxious and toxic fumes.
Carbon oxides.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Keep away from sources of ignition - No smoking.
Avoid contact with skin, eyes and clothing.
Do not breathe vapours/dust.
- Environmental precautions** : Prevent product from entering drains.
Do not contaminate surface water.
Avoid subsoil penetration.
- Methods for cleaning up** : Soak up with inert absorbent material and dispose of as hazardous waste.

7. HANDLING AND STORAGE**Handling**

- Advice on safe handling** : Provide sufficient air exchange and/or exhaust in work rooms.
Ensure adequate ventilation.
Handle and open container with care.

Storage

- Further information on storage conditions** : Keep away from food, drink and animal feeding stuffs.
Keep container tightly closed.
Store at room temperature in the original container.
- Storage hazard class** : Storage class 12, Liquids, not dangerous
- Huntsman Advanced Materials**

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SAFETY DATA SHEET
according to applicable EC directive**HUNTSMAN****Ident-No: ARALDITE PY 4122 US**

Version 1

Print Date 13.04.2005

Revision Date 12.04.2005

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Control parameters	Update	Basis
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Personal protective equipment

- Eye protection** : Tightly fitting safety goggles.
Face-shield.
- Hand protection** : rubber or plastic gloves
- Skin and body protection** : Protective suit
Safety shoes.
- Protective measures** : Keep away from sources of ignition - No smoking.
Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Form** : viscous
- Form** : liquid
- Colour** : clear
light yellow
- Odour** : slight
- Flash point** : 177 °C
- Vapour pressure** : 0.006 Pa
at 20 °C
- Relative density** : 1.084
at 20 °C
- Water solubility** : at 20 °C
Note: practically insoluble
- Miscibility with water** : immiscible

10. STABILITY AND REACTIVITY

- Conditions to avoid** : Note: Take necessary action to avoid static electricity discharge.
- Materials to avoid** : Strong acids and strong bases.
Strong oxidizing agents.

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SAFETY DATA SHEET
according to applicable EC directive**HUNTSMAN****Ident-No: ARALDITE PY 4122 US**Version 1
Revision Date 12.04.2006

Print Date 13.04.2005

Hazardous decomposition products : Carbon oxides. Burning produces obnoxious and toxic fumes.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : LD50 rat
Dose: > 5,000 mg/kg

Acute dermal toxicity : LD50 rat
Dose: > 2,000 mg/kg

Eye irritation : Irritating
rabbit

Skin irritation : Irritating
rabbit
dermal

Sensitization : Causes sensitization.
guinea pig
dermal

12. ECOLOGICAL INFORMATION**Ecotoxicity effects****Further information on ecology**

Additional ecological information : Avoid subsoil penetration.
Prevent product from entering drains.
Do not contaminate surface water.

13. DISPOSAL CONSIDERATIONS

Product : Must be incinerated, when in compliance with local regulations.

Container : Empty containers can be landfilled after cleaning, when in compliance with the Environmental Protection (Duty of Care) Regulations 1991.

Contaminated packaging : Waste Key Number: 306066

14. TRANSPORT INFORMATION**Land transport****ADR:**

Regulation: Not dangerous goods

RID:

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SAFETY DATA SHEET
according to applicable EC directive**HUNTSMAN****Ident-No: ARALDITE PY 4122 US**

Version 1

Print Date 13.04.2005

Revision Date 12.04.2005

Regulation: Not dangerous goods

Sea transport

IMDG:

Regulation: Not dangerous goods

Air transport

IATA-DGR:

Regulation: Not dangerous goods

15. REGULATORY INFORMATION

Labelling according to EEC Directive

Labelling required

Symbol(s): : XI Irritant

R-phrases : R36/38 Irritating to eyes and skin.
R43 May cause sensitization by skin contact.S-phrases : S28 After contact with skin, wash immediately
S37/39 with plenty of soap and water.
Wear suitable gloves and eye/face protection.

Exceptional labelling of special preparations : Contains epoxy constituents. See information supplied by the manufacturer.

Hazardous components which must be listed on the label : butylated epoxy resin

National legislation

Water contaminating class : 1 slightly water endangering
(self-assessment)

Notification status

: EINECS yes

: TSCA yes

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NO. 0496 P. 7/8

SAFETY DATA SHEET
according to applicable EC directive**HUNTSMAN****Ident-No: ARALDITE PY 4122 US**

Version 1

Print Date 13.04.2005

Revision Date 12.04.2005

: AICS no

16. OTHER INFORMATION**List of R-phrases (Section 2)**

R38/38

Irritating to eyes and skin.

R43

May cause sensitization by skin contact.

All information is based on results gained from experience and tests and is believed to be accurate but is given without acceptance of liability for loss or damage attributable to reliance thereon as conditions of use lie outside our control. Users should always carry out sufficient tests to establish the suitability of any products for their intended applications. No statements shall be incorporated in any contract unless expressly agreed in writing nor construed as recommending the use of any product in conflict of any patent. All goods are supplied subject to Huntsman Advanced Materials General Conditions of Sale.

Vantico Inc.
North America
Polymer Specialties
251 Fielde Lane
Brewster, NY 13608

8am to 4:30pm Phone: (914) 785-3000
24-Hour Health/Environmental Emergency Phone: 1-888-354-3323

vantico
1275

Effective Date: 11/13/00

Material Safety Data Sheet

MSDS No: 12036

1. PRODUCT IDENTIFICATION

Trade Name: Araldite PY 4122 US

Chemical Family: Epoxide

Health	2
Flammability	1
Reactivity	0
Protective Equipment	X

HMI: RATING

Intended Use or Product Type: Modified Liquid Epoxy Resin

2. COMPOSITION / INFORMATION ON INGREDIENTS

O S H A	CAS No.	CHEMICAL IDENTITY	EXPOSURE LIMITS					CARCINOGEN STATUS		
			ACGIH		OSHA		MFR.	IARC	NTP	OSHA
			TWA	STEL	PEL	STEL				
*	71033-08-4	Oxirane, 2,2'-[1-(1-methylethylidene)bis[4,1-phenyleneoxy[1-(butoxymethyl)-2,1-ethanediyl]oxymethylene]]bis-Isopropylidenebisphenol, bis[(2-glycidyloxy-1-n-butoxy)-1-propyl ether]	NE	NE	NE	NE	NE	NR	NR	NR
	Common Name:									

NE = Not Established NR = Not Reviewed * = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION

Emergency Overview: Warning ! Can cause severe skin sensitization and may cause irritation effects.

Primary Route(s) of Entry: Dermal.

4. FIRST AID MEASURES

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Nov-07-2003 09:16PM FROM-CUSTOMER SVS RM 256

Araldite PY 4122 US**Vantico Inc.
Polymer Specialists****Effective Date: 11/13/00**

Ingestion: If swallowed, give at least 3-4 glasses of water but do not induce vomiting. If vomiting occurs, give water again. Do not give anything by mouth to an unconscious or convulsing person. Get medical attention. Have physician determine whether vomiting or stomach evacuation is necessary.

Skin: For skin contact, wash with large amounts of running water, and soap, if available, for 15 minutes. Remove contaminated clothing and shoes. Get immediate medical attention. Discard or decontaminate clothing before re-use and destroy contaminated shoes.

Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes: For eye contact, flush eyes with plenty of water for several minutes. Get medical attention if irritation occurs.

Overexposure Effects: Overexposure to this material can cause severe allergic skin reactions and may cause slight skin and eye irritation.

Medical Conditions Aggravated by Exposure: Allergy, eczema or skin conditions.

Additional Information: Promptly remove wet contaminated non-impervious clothing. Wash before reuse.

5. FIRE FIGHTING MEASURES

Flash Point: 351°F (177 °C)

Fire Fighting Extinguishing Media: Carbon dioxide, foam, dry chemical, water spray.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Avoid all personal contact. Take up with absorbent material. Shovel into closed containers. Flush contaminated area with water.

7. HANDLING AND STORAGE

Precautions: Avoid contact with eyes, skin and clothing. Avoid breathing vapor, mist or spray. Use only with good ventilation. Individuals should wash thoroughly after handling. For industrial use only.

Storage Information: Store in sealed containers. Keep containers closed to prevent moisture absorption and contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective Equipment: Wear appropriate equipment to prevent probability of skin or eye contact.

Skin Protection: Wear impervious gloves.

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Araldite PY 4122 US**Effective Date: 11/13/00****Vantico Inc.
Polymer Specialties****Respiratory Protection:** Use NIOSH approved respirator suitable for organic vapors, if required.**Eye Protection:** Wear splash-proof chemical goggles.**Engineering Controls:** Good general mechanical ventilation and local exhaust.**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Clear
Color:	Pale straw colored
Physical State:	Viscous Liquid
Solubility in Water:	$-3 \times 10(-5)$ g/l at 20°C
Vapor Pressure:	$4.5 \times 10(-5)$ mm Hg at 20°C
Specific Gravity:	1.084 at 20°C (68 °F) (H ₂ O = 1)

10. STABILITY AND REACTIVITY**Conditions to Avoid:** Elevated temperatures.**Stability:** Stable.**Incompatibility:** Strong oxidizing agents.**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, aldehydes.**Hazardous Polymerization:** Will not occur.**11. TOXICOLOGICAL INFORMATION****Acute Oral Effects (LD₅₀):** (Rat) Greater than 2000 mg/kg.**Acute Dermal Toxicity (LD₅₀):** (Rat) Greater than 2000 mg/kg.**Sensitization:** (Guinea Pig) Extreme skin sensitization.**Skin Irritation:** (Rabbit) Not an irritant.**Eye Irritation:** (Rabbit) Not an irritant.**Mutagenicity:****Ames Test:** positive**Micronucleus Test (Chinese Hamster):** negative**12. ECOLOGICAL INFORMATION****Additional Information:** No ecological information available.**13. DISPOSAL CONSIDERATIONS**

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Araldite PY 4122 US

Vantico Inc.
Polymer Specialties

Effective Date: 11/13/00

Waste Disposal Method: Dispose in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

Department of Transportation: Not regulated.

15. REGULATORY INFORMATION**US Federal Regulations:**

Occupational Safety and Health Act (OSHA): This Material Safety Data Sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard.

Resource Conservation and Recovery Act (RCRA): Not a hazardous waste under RCRA (40 CFR 261).

SARA Title III: Section 304 - CERCLA: Not listed.

SARA Title III: Section 313 Toxic Chemical List (TCL): This product does not contain a toxic chemical for routine annual 'Toxic Chemical Release Reporting' under Sec. 313 (40 CFR 372).

TSCA Section 8(b) - Inventory Status: Chemical components listed on TSCA Inventory.

International Regulations:

Canadian Inventory Status: Included on Non-Domestic Substances List (NDSL).

State Regulations:

New Jersey Right-to-Know: The following is required composition information:

CAS Number: 71033-08-4

Chemical Name: Oxirane, 2,2'-[1-(methylethylidene)bis[4, 1-phenyleneoxy[1-(butoxymethyl)-2, 1-ethanediyl]oxy methylene]]bis-

Pennsylvania Right-to-Know: The following is required composition information:

CAS Number: 71033-08-4

Chemical Name: Oxirane, 2,2'-[1-(methylethylidene)bis[4, 1-phenyleneoxy[1-(butoxymethyl)-2, 1-ethanediyl]oxy methylene]]bis-

Comment: Not on Pennsylvania Hazardous Substance List.

16. OTHER INFORMATION

MSDS No:	12036
Prepared By:	M. Slattery
Approved By:	Kaplow, Lorraine
Title:	Manager, Product Safety
Approved Date:	02/17/00

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Araldite PY 4122 US

Effective Date: 11/13/00

Vantico Inc.
Polymer Specialties

Other Information: For further information, contact Product Safety personnel at (914) 785-3000.

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1275 (M)

Ciba Specialty Chemicals Corporation
North AmericaPerformance
Polymers281 Fields Lane
Brewster, NY 105098am to 5pm Phone: (914) 785-3000
24-Hour Health/Environmental Emergency Phone: 1-800-873-1138

Ciba



Effective Date: 7/31/97

Material Safety Data Sheet

MSDS No: 4697

1. PRODUCT IDENTIFICATION

Trade Name: XB 4122

PY 4122

Chemical Family: Epoxide

HEALTH	1
FLAMMABILITY	1
REACTIVITY	0
PROTECTIVE EQUIPMENT	X

HMIS RATING

Intended Use or Product Type: Modified Liquid Epoxy Resin

2. COMPOSITION / INFORMATION ON INGREDIENTS

O S H A	CAS#	CHEMICAL IDENTITY	EXPOSURE LIMITS					CARCINOGEN STATUS		
			ACGIH TWA	ACGIH STEL	OSHA PEL	OSHA STEL	MFR.	IARC	NTP	OSHA
*	71033-08-4	Oxirane, 2,2'-((1-methylethylidene)bis[4,1-phenyleneoxy[1-(butoxymethyl)-2,1-ethanediyl]oxymethylene]]bis- Common Name: Isopropylidenebisphenol, bis((2-glycidyoxy-3-n-butoxy)-1-propyl ether)	NE	NE	NE	NE	NE	NR	NR	NR

NE = Not Established NR = Not Reviewed * = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION

Emergency Overview: Warning! Can cause severe skin sensitization and may cause irritation effects.

Primary Route(s) of Entry: Dermal.

4. FIRST AID MEASURES

Ingestion: If swallowed, give at least 3-4 glasses of water but do not induce vomiting. If vomiting occurs, give water again. Do not give anything by mouth to an unconscious or convulsing person. Get medical attention. Have physician determine whether vomiting or stomach evacuation is necessary.

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Effective Date: 7/31/97

XB 4122

Skin: For skin contact, wash with large amounts of running water, and soap, if available, for 15 minutes. Remove contaminated clothing and shoes. Get immediate medical attention. Discard or decontaminate clothing before re-use and destroy contaminated shoes.

Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes: For eye contact, flush eyes with plenty of water for several minutes. Get medical attention if irritation occurs.

Overexposure Effects: Overexposure to this material can cause severe allergic skin reactions and may cause slight skin and eye irritation.

Medical Conditions Aggravated by Exposure: Allergy, eczema or skin conditions.

Additional Information: Promptly remove wet contaminated non-impervious clothing. Wash before reuse.

5. FIRE FIGHTING MEASURES

Flash Point: 351°F (177°C)

Fire Fighting Extinguishing Media: Carbon dioxide, foam, dry chemical, water spray.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Avoid all personal contact. Take up with absorbent material. Shovel into closable containers. Flush contaminated area with water.

7. HANDLING AND STORAGE

Precautions: Avoid contact with eyes, skin and clothing. Avoid breathing vapor, mist or spray. Use only with good ventilation. Individuals should wash thoroughly after handling. Store in dry area in closed containers. For industrial use only.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective Equipment: Wear appropriate equipment to prevent probability of skin or eye contact.

Skin Protection: Wear impervious gloves.

Respiratory Protection: Use NIOSH approved respirator suitable for organic vapors, if required.

Eye Protection: Wear splash-proof chemical goggles.

Engineering Controls: Good general mechanical ventilation and local exhaust.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear
Physical State: Viscous Liquid

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PAPER: CTEA SPECIALTY CHEM AT 05/09 01:23:47 Page 3

Effective Date: 7/31/97

XB 4122

Solubility in Water: $\sim 3 \times 10(-5)$ g/l at 20°C
Vapor Pressure: $4.5 \times 10(-5)$ mm Hg at 20°C
Specific Gravity: 1.084 at 20°C (68°F) (H₂O = 1)

10. STABILITY AND REACTIVITY

Conditions to Avoid: Elevated temperatures.

Stability: Stable.

Incompatibility: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, aldehydes.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral Effects (LD50): (Rat) Greater than 2000 mg/kg.

Acute Dermal Toxicity (LD50): (Rat) Greater than 2000 mg/kg.

Sensitization: (Guinea Pig) Extreme skin sensitization.

Skin Irritation: (Rabbit) Not an irritant.

Eye Irritation: (Rabbit) Not an irritant.

Mutagenicity:

Ames Test: positive

Micronucleus Test (Chinese Hamster): negative

12. ECOLOGICAL INFORMATION

Additional Information: No ecological information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

Department of Transportation: Not regulated.

15. REGULATORY INFORMATION

OSHA Status: This Material Safety Data Sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard.

TSCA Inventory Status: Chemical components listed on TSCA Inventory.

FAXER: CLEM SPECIALTY CHEM At 05/29 01:23:47 Page 4

Effective Date: 7/31/97

XB 4122

SARA Title III: Section 313 - Toxic Chemical(s): This product does not contain a toxic chemical for routine annual Toxic Chemical Release Reporting under Sec 313 (40 CFR 372)

RCRA: Not a hazardous waste under RCRA (40 CFR 261).

CERCLA: Not listed

Canadian Inventory Status (CEPA): Included on Non-Domestic Substances List (NDSL).

New Jersey Right-to-Know: The following is required composition information:

CAS Number: 71033-08-4

Chemical Name: Oxirane, 2,2'-[(1-methylethylidene)bis[4, 1-phenyleneoxy[1-(butoxymethyl)-2, 1-ethanediyl]oxymethylene]]bis-

Pennsylvania Right-to-Know: The following is required composition information:

CAS Number: 71033-08-4

Chemical Name: Oxirane, 2,2'-[(1-methylethylidene)bis[4, 1-phenyleneoxy[1-(butoxymethyl)-2, 1-ethanediyl]oxymethylene]]bis-

Comment: Not on Pennsylvania Hazardous Substance List.

16. OTHER INFORMATION

MSDS No:

4697

Other Information: For further information, contact Product Safety personnel at (914) 785-3000.

Disclaimer: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein.



SENT BY:

5-28-99 12:43PM :

CIBA POLYMER

978 774 0516;# 1/ 1

Ciba Specialty Chemicals
Performance Polymer Division
281 Fiddis Lane
Brewster, New York 10509


Ciba**Fax**

To Michael Marino		Company Devcon	
Fax No. 978 774-0516	Tel. No. 978 777-1100	Location Danvers, MA	Country
From Dr. Jonas Weiss, Director, Product Safety		Location Brewster, NY	
Fax No. 914 785-3476	Tel. No. 914 785-3375	Date May 28, 1999	No. of pages 1

Re: Inventory Status of Ciba Specialty Chemicals Products

- 1205 Araldite GY 508: On TSCA, Canadian DSL, Australian AICS, Korean ECL, Philippines PICCS and European EINECS*.
- 801001053 Araldite GY 285: On TSCA, Australian AICS, and European EINECS. Also on Canadian NDSL.
- 1275 Araldite PY 322: On TSCA, Japanese MITI list and European EINECS. Also on Canadian NDSL.
- 1539 Hardener HY 2963: On TSCA, Canadian DSL, Korean ECL and European EINECS*.
- 1570 Hardener HY 943: On TSCA, Canadian DSL, Australian AICS, Korean ECL and European EINECS*

*These products include polymers that are not specifically listed on EINECS, but are accepted in the EU because their monomers are listed.



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ADD

M A T E R I A L S A F E T Y D A T A S H E E T	
CIBA-GEIGY CORPORATION POLYMERS DIVISION 281 FIELDS LANE BREWSTER, NEW YORK 10509 (914) 785-3000	EMERGENCY PHONE NUMBER: (800) 888-8372

SECTION I-IDENTITY INFORMATION

IDENTITY (TRADENAME): ARALDITE PY 322

H 2*

FAMILY/CHEMICAL NAME:

EPOXIDE

F 1

PRODUCT TYPE:

MODIFIED LIQUID EPOXY RESIN

R 0

HAZARD STATEMENT 1

PP L

* THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN *
* PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD *
* COMMUNICATION STANDARD 29 CFR 1910.1200. *
* THIS PRODUCT IS CONSIDERED TO BE A HAZARDOUS *
* CHEMICAL UNDER THAT STANDARD. *

SECTION II-HAZARDOUS INGREDIENTS

SPECIFIC CHEMICAL NAME:

OXIRANE, 2,2'-[4,4'-METHYLETHYLIDENE]BIS[4,1-PHENYLENEOXY(1-
(BUTOXYMETHYL)-2,1-ETHANEDIYL)OXYMETHYLENE]BIS-

CAS #: 71033-08-4

EXPOSURE LIMITS:

OSHA PEL: NONE ESTABLISHED

ACGIH TLV: NONE ESTABLISHED

CARCINOGENICITY:

THIS CHEMICAL IS NOT CONSIDERED TO BE CARCINOGENIC
BY NTP, IARC, OR OSHA.

SECTION III-PHYSICAL DATA

APPEARANCE:

CLEAR VISCOUS LIQUID.

VAPOR PRESSURE:

4.5 X 10 (-5) MM HG AT 20C

SOLUBILITY IN WATER:

ARALDITE PY 322

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CA. 3 X 10(-5) G/L AT 20C
SPECIFIC GRAVITY:
1.084 AT 20C (H2O = 1)

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:
351F
EXTINGUISHING MEDIA:
CARBON DIOXIDE, FOAM, DRY CHEMICAL, WATER SPRAY.
FIRE FIGHTING PROCEDURES-SPECIAL:
USE SELF-CONTAINED BREATHING APPARATUS.
UNUSUAL FIRE AND EXPLOSION HAZARDS:
DECOMPOSITION AND COMBUSTION PRODUCTS MAY BE TOXIC.

SECTION V-REACTIVITY DATA

STABILITY:
STABLE.
CONDITIONS TO AVOID:
ELEVATED TEMPERATURES.
INCOMPATIBILITY:
STRONG OXIDIZING AGENTS.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE, CARBON DIOXIDE, ALDEHYDES.
HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR.

SECTION VI-HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:
DERMAL.
ORAL LD50:
(RAT) GREATER THAN 2000 MG/KG.
DERMAL LD50:
(RAT) GREATER THAN 2000 MG/KG.
SKIN IRRITATION:
(RABBIT) NOT AN IRRITANT.
EYE IRRITATION:
(RABBIT) NOT AN IRRITANT.
SENSITIZATION:
(GUINEA PIG) EXTREME SKIN SENSITIZATION.
MUTAGENICITY:
AMES TEST: POSITIVE
MICRONUCLEUS TEST (CHINESE HAMSTER): NEGATIVE
OVEREXPOSURE EFFECTS:
OVEREXPOSURE TO THIS MATERIAL CAN CAUSE SEVERE ALLERGOIC SKIN
REACTIONS AND MAY CAUSE SLIGHT SKIN AND EYE IRRITATION.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
ALLERGY, ECZEMA OR SKIN CONDITIONS.
EMERGENCY AND FIRST AID PROCEDURES-EYES:
FOR EYE CONTACT, FLUSH EYES WITH PLENTY OF WATER FOR SEVERAL
MINUTES. GET MEDICAL ATTENTION IF IRRITATION OCCURS.

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EMERGENCY AND FIRST AID PROCEDURES-SKIN:

FOR SKIN CONTACT, WASH WITH LARGE AMOUNTS OF RUNNING WATER, AND SOAP, IF AVAILABLE, FOR 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. GET IMMEDIATE MEDICAL ATTENTION. DISCARD OR DECONTAMINATE CLOTHING BEFORE RE-USE AND DESTROY CONTAMINATED SHOES.

EMERGENCY AND FIRST AID PROCEDURES-INGESTION:

IF SWALLOWED, GIVE AT LEAST 3-4 GLASSES OF WATER BUT DO NOT INDUCE VOMITING. IF VOMITING OCCURS, GIVE WATER AGAIN. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. GET MEDICAL ATTENTION. HAVE PHYSICIAN DETERMINE WHETHER VOMITING OR STOMACH EVACUATION IS NECESSARY.

EMERGENCY AND FIRST AID PROCEDURES-INHALATION:

IF INHALED, REMOVE FROM AREA TO FRESH AIR. GET MEDICAL ATTENTION IF RESPIRATORY IRRITATION DEVELOPS OR IF BREATHING BECOMES DIFFICULT.

EMERGENCY AND FIRST AID PROCEDURES-OTHER:

PROMPTLY REMOVE WET CONTAMINATED NON-IMPERVIOUS CLOTHING. WASH BEFORE REUSE.

SECTION VII-SPILL OR LEAK PROCEDURES

SPILL PROCEDURES:

AVOID ALL PERSONAL CONTACT. TAKE UP WITH ABSORBENT MATERIAL. SHOVEL INTO CLOSABLE CONTAINERS. FLUSH CONTAMINATED AREA WITH WATER.

WASTE DISPOSAL METHODS:

DISPOSE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION VIII-SPECIAL PROTECTION INFORMATION

VENTILATION:

GOOD GENERAL MECHANICAL VENTILATION AND LOCAL EXHAUST.

PROTECTIVE GLOVES:

WEAR IMPERVIOUS GLOVES.

EYE PROTECTION:

WEAR SPLASH-PROOF CHEMICAL GOGGLES.

RESPIRATORY PROTECTION:

USE NIOSH APPROVED RESPIRATOR SUITABLE FOR ORGANIC VAPORS, IF REQUIRED.

OTHER PROTECTIVE EQUIPMENT:

WEAR APPROPRIATE EQUIPMENT TO PREVENT PROBABILITY OF SKIN OR EYE CONTACT.

SECTION IX-SPECIAL PRECAUTIONS

HMIS CODE:

HEALTH : 1

FIRE : 1

REACTIVITY : 0

HANDLING, SHIPPING AND STORING PRECAUTIONS:

WARNING! CAN CAUSE SEVERE SKIN SENSITIZATION AND MAY CAUSE IRRITATION EFFECTS.

ARALDITE PY 322

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AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID BREATHING VAPOR, MIST OR SPRAY.
USE WITH ADEQUATE VENTILATION.
STORE IN COOL, DRY AREA IN CLOSED CONTAINERS.
INDIVIDUALS SHOULD WASH THOROUGHLY AFTER HANDLING.
FOR INDUSTRIAL USE ONLY.

SECTION X-REGULATORY INFORMATION

DOT CLASS:
NOT REGULATED.
RCRA STATUS:
NOT A HAZARDOUS WASTE UNDER RCRA (40 CFR 261).
CERCLA STATUS:
NOT LISTED.
SARA/TITLE III - TOXIC CHEMICALS LIST:
THIS PRODUCT DOES NOT CONTAIN A TOXIC CHEMICAL FOR ROUTINE
ANNUAL "TOXIC CHEMICAL RELEASE REPORTING" UNDER SEC. 313
(40 CFR 372).
TSCA INVENTORY STATUS:
CHEMICAL COMPONENTS LISTED ON TSCA INVENTORY.
CALIFORNIA PROPOSITION 65:
WARNING: THIS PRODUCT CONTAINS A CHEMICAL WHICH IS KNOWN
TO THE STATE OF CALIFORNIA TO CAUSE CANCER.
EPICHLOROHYDRIN TRACE
CANADIAN INVENTORY STATUS:
INCLUDED ON NON-DOMESTIC SUBSTANCES LIST (NDSL).
NEW JERSEY RIGHT-TO-KNOW LABELING INFORMATION:
THIS PRODUCT CONTAINS THE FOLLOWING:

CHEMICAL NAME : OXIRANE, 2,2'-((1-METHYLETHYLIDENE)BIS(4,1-PHENY
LENEOXY(1-(BUTOXYMETHYL)-2,1-ETHANEDIYL)OXYMETHY
(ENE))BIS-
CAS NUMBER : 71033-08-4

PENNSYLVANIA RIGHT-TO-KNOW ACT:
THE FOLLOWING IS REQUIRED COMPOSITION INFORMATION.

CHEMICAL NAME : OXIRANE, 2,2'-((1-METHYLETHYLIDENE)BIS(4,1-PHENY
LENEOXY(1-(BUTOXYMETHYL)-2,1-ETHANEDIYL)OXYMETHY
LENE))BIS-
CAS NUMBER : 71033-08-4
COMMENTS : NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

ARALDITE PY 322

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ISSUE DATE: 12/13/94 REVISION: 03
FOR FURTHER HEALTH/SAFETY INFORMATION, CONTACT : PRODUCT SAFETY DIR
FOR TECHNICAL INFORMATION CONTACT YOUR TECHNICAL SALES REPRESENTATIVE.

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON
DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY
KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE INFORMATION
CONTAINED HEREIN.

ARALDITE PY 322

SENT BY: CIBA, POLYMERS : 6-7-96 11:48AM : ROOM 247- 508 774 0516: # 6/6

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M A T E R I A L S A F E T Y D A T A S H E E T	
[REDACTED] CORPORATION PLASTICS & ADDITIVES DIVISION THREE SKYLINE DRIVE HAWTHORNE, NEW YORK 10532 (914) 347-4700	EMERGENCY PHONE NUMBER: (800) 888-8372

SECTION I-IDENTITY INFORMATION

IDENTITY (TRADENAME):

FAMILY/CHEMICAL NAME:

EPOXIDE

PRODUCT TYPE:

MODIFIED LIQUID EPOXY RESIN

IMPORTANT:

* THIS MATERIAL WILL NOT BE SOLD FOR USE IN PRODUCTS *
* FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES OR *
* ABRADED SKIN, OR IMPLANTATION WITHIN THE HUMAN BODY, IS *
* SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF *
* SUCH POTENTIAL USES, CIBA-GEIGY CORPORATION IS NOT ABLE *
* TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR *
* SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES. *

HAZARD STATEMENT:

* THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN *
* PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD *
* COMMUNICATION STANDARD 29 CFR 1910.1200. *
* THIS PRODUCT IS CONSIDERED TO BE A HAZARDOUS *
* CHEMICAL UNDER THAT STANDARD. *

SECTION II-HAZARDOUS INGREDIENTS

SPECIFIC CHEMICAL NAME:

BISPHENOL A - TYPE EPOXY RESIN. CHEMICAL IDENTITY TRADE SECRET.

CAS #: NOT AVAILABLE

EXPOSURE LIMITS:

OSHA PEL: NOT ESTABLISHED

ACGIH TLV: NOT ESTABLISHED

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CARCINOGENICITY:

THIS CHEMICAL IS NOT CONSIDERED TO BE CARCINOGENIC
BY NTP, IARC, OR OSHA.

SECTION III-PHYSICAL DATA

APPEARANCE AND ODOR:

LOW VISCOSITY LIQUID RESIN

SOLUBILITY IN WATER:

INSOLUBLE.

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:

>200F.

EXTINGUISHING MEDIA:

CARBON DIOXIDE, FOAM, DRY CHEMICAL, WATER SPRAY.

FIRE FIGHTING PROCEDURES-SPECIAL:

USE SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

DECOMPOSITION AND COMBUSTION PRODUCTS MAY BE TOXIC.

SECTION V-REACTIVITY DATA

STABILITY:

STABLE.

CONDITIONS TO AVOID:

ELEVATED TEMPERATURES.

INCOMPATIBILITY:

STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

CARBON MONOXIDE, CARBON DIOXIDE, ALDEHYDES.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR.

SECTION VI-HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:

DERMAL.

SKIN IRRITATION:

(RABBITS) NON-IRRITANT.

EYE IRRITATION:

MAY CAUSE EYE IRRITATION.

SENSITIZATION:

POTENTIAL SENSITIZER.

OVEREXPOSURE EFFECTS:

IRRITATION. MAY CAUSE SENSITIZATION AND DERMATITIS.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

ALLERGY, ECZEMA OR SKIN CONDITIONS.

EMERGENCY AND FIRST AID PROCEDURES-EYES:

IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES.

EMERGENCY AND FIRST AID PROCEDURES-SKIN:

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PROMPTLY WASH THOROUGHLY WITH MILD SOAP AND WATER.
EMERGENCY AND FIRST AID PROCEDURES-INGESTION:
IF CONSCIOUS, GIVE LARGE QUANTITIES OF WATER. GET
MEDICAL ATTENTION.
EMERGENCY AND FIRST AID PROCEDURES-INHALATION:
REMOVE TO FRESH AIR. GIVE OXYGEN IF BREATHING IS DIFFICULT.
EMERGENCY AND FIRST AID PROCEDURES-OTHER:
PROMPTLY REMOVE WET CONTAMINATED NON-IMPERVIOUS CLOTHING.
WASH BEFORE REUSE.

SECTION VII-SPILL OR LEAK PROCEDURES

SPILL PROCEDURES:

AVOID ALL PERSONAL CONTACT. TAKE UP WITH ABSORBENT
MATERIAL. SHOVEL INTO CLOSABLE CONTAINERS. FLUSH
CONTAMINATED AREA WITH WATER.

WASTE DISPOSAL METHODS:

DISPOSE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL
REGULATIONS.

SECTION VIII-SPECIAL PROTECTION INFORMATION

VENTILATION:

GOOD GENERAL MECHANICAL VENTILATION AND LOCAL EXHAUST.

PROTECTIVE GLOVES:

WEAR IMPERVIOUS GLOVES.

EYE PROTECTION:

WEAR SPLASH-PROOF CHEMICAL GOGGLES.

RESPIRATORY PROTECTION:

USE NIOSH APPROVED RESPIRATOR SUITABLE FOR ORGANIC
VAPORS, IF REQUIRED.

OTHER PROTECTIVE EQUIPMENT:

WEAR APPROPRIATE EQUIPMENT TO PREVENT PROBABILITY OF SKIN
OR EYE CONTACT.

SECTION IX-SPECIAL PRECAUTIONS

HANDLING, SHIPPING AND STORING PRECAUTIONS:

CAUTION! THE TOXICOLOGICAL PROPERTIES OF THIS COMPOUND HAVE
NOT BEEN FULLY INVESTIGATED.

AVOID ALL CONTACT WITH EYES, SKIN AND CLOTHING.

AVOID BREATHING MISTS OR VAPOR. DO NOT TASTE OR SWALLOW.

WASH THOROUGHLY AFTER HANDLING, AND BEFORE EATING, DRINKING
OR SMOKING.

KEEP CONTAINERS CLOSED WHEN NOT IN USE AND DURING TRANSPORT.

USE WITH ADEQUATE VENTILATION.

FOR INDUSTRIAL USE ONLY.

SECTION X- REGULATORY INFORMATION

DOT CLASS:

NOT REGULATED.

RCRA STATUS:

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NOT A HAZARDOUS WASTE UNDER RCRA (40 CFR 261).
CERCLA STATUS:
NOT LISTED.
TSCA INVENTORY STATUS:
CHEMICAL COMPONENTS LISTED ON TSCA INVENTORY.
PENNSYLVANIA RIGHT-TO-KNOW ACT:
THE FOLLOWING IS REQUIRED COMPOSITION INFORMATION.

CHEMICAL NAME : SPECIFIC CHEMICAL IDENTITY OF THIS COMPONENT
IS BEING WITHHELD AS TRADE SECRET.
GENERIC NAME : MODIFIED BISPHENOL A EPOXY RESIN
COMMENTS : NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

ISSUE DATE: 07/21/88 REVISION: 02C
FOR FURTHER INFORMATION, PLEASE CONTACT: DR. JONAS WEISS

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE
BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE
OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH
RESPECT TO THE INFORMATION CONTAINED HEREIN.

XB 4122

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APPENDIX B

Revised Classification Data Sheet

This is a WORKSHEET FOR GENERATING HMIS RATINGS. This is not a Material Safety Data Sheet (MSDS).

NATIONAL PAINT & COATINGS ASSOCIATION
1500 Rhode Island Avenue, NW ■ Washington, DC 20005 ■ 202/462-6272

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

Material ARALDITE XB-4122 Flash Pt. >200°F
 Synonyms ARALDITE XB-4122 RESIN Boiling Pt. "
 CAS No. TRADE SECRET of CIBA-GEIGY CORP. Odor (Description & Threshold) (Optional) "
 Company CIBA-GEIGY CORP./PLASTICS & ADHESIVES Div.
 Address 3 SKYLINE DR Ratings "
 City/State/Zip HAWTHORNE, NJ 10532 Health 2*
 Person preparing form " Flammability 1
 Name R. Specter Title CHEMIST Reactivity 0
7/1/88 Current Regulated Level(s) "
 ACGIH TLV n/e

I. HEALTH

Acute Toxic Properties

1. Oral LD₅₀ Rat

- ☐ 0 >5,000 mg/kg
☐ 1 >500-5,000 mg/kg
☐ 2 >50-500 mg/kg
☐ 3 >1-50 mg/kg
☐ 4 0-1 mg/kg
☐ Other "

2. Dermal LD₅₀ Rabbit

- ☐ 0 >5,000 mg/kg
☐ 1 >1,000-5,000 mg/kg
☐ 2 >200-1,000 mg/kg
☐ 3 >20-200 mg/kg
☐ 4 0-20 mg/kg
☐ Other "

(over)

3. Inhalation

A. Gases, vapor (ppm)

LC₅₀ Rat

1-hour exposure

- ☐ 0 >10,000 ppm
☐ 1 >1,000-10,000 ppm
☐ 2 >500-1,000 ppm
☐ 3 >50-500 ppm
☐ 4 1-50 ppm
☐ Other _____

B. Dusts, fumes, mists (mg/L)

LC₅₀ Rat

1-hour exposure

- ☐ 0 >20 mg/L
☐ 1 >5-20 mg/L
☐ 2 >1-5 mg/L
☐ 3 >0.1-1 mg/L
☐ 4 0-0.1 mg/L
☐ Other _____

4. Skin Irritation

1-hour exposure

- ☐ 0 Extremely irritating
☐ 1 Slightly irritating
☐ 2 Primary irritant, secondary irritant
☐ 3 Secondary irritant and/or irritant
☐ 4 Not applicable
☐ Other _____

5. Eye Irritation

1-hour exposure

- ☐ 0 Extremely irritating
☐ 1 Slightly irritating
☐ 2 Primary irritant, secondary irritant
☐ 3 Secondary irritant and/or irritant
☐ 4 Not applicable
☐ Other _____

II. FLAMMABILITY RATING CRITERIA

0 MODERATE HAZARD—Materials that will not burn. This degree should include:

Any material that will not burn in air when exposed to a temperature of 1800°F for a period of 5 minutes.

☒ 1 SLIGHT HAZARD—Materials that must be preheated before ignition can occur. Materials in this degree require considerably preheating, before ignition and combustion can occur. This degree should include:

Materials which will burn in air when exposed to a temperature of 1800°F for a period of 5 minutes or less. Liquids, solids, and semisolids having a flash point above 200°F. This degree includes most ordinary combustible materials.

2 MODERATE HAZARD—Materials that must be preheated before or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not burn under normal conditions from hazardous temperatures or under moderate heating may release vapor to conduct quantities to produce hazardous situations with air. This degree should include:

Liquids having a flash point above 100°F, but not exceeding 200°F. Solids and semisolids which readily give off combustible vapors.

III. REACTIVITY

0 MODERATE HAZARD—Materials which in themselves are not reactive with water.

Materials which are not reactive with water.

☐ 1 BLOND HAZARD—Materials which in themselves are not reactive with water, but which can become reactive at elevated temperatures and pressures or which may react with water with some release of energy but not violently.

☐ 2 MODERATE HAZARD—Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. This degree should include materials which can undergo chemical change with rapid release of energy at normal temperatures and pressures or which can undergo violent chemical change at elevated temperatures and pressures. It should also include those materials which may react violently with water or which may form potentially explosive mixtures with water.

☐ 3 SEVERE HAZARD—Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. This degree should include materials which can undergo chemical change with rapid release of energy at normal temperatures and pressures or which can undergo violent chemical change at elevated temperatures and pressures. It should also include those materials which may react violently with water or which may form potentially explosive mixtures with water.

☐ 4 SEVERE HAZARD—Materials which in themselves are capable of detonation or of explosive decomposition or explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. This degree should include materials which are sensitive to thermal or mechanical shock or elevated temperatures and pressures or which react explosively with water without requiring heat or confinement.

☐ 5 SEVERE HAZARD—Materials which in themselves are readily capable of detonation or of explosive decomposition or explosive reaction at normal temperatures and pressures. This degree should include materials which are sensitive to mechanical or thermal shock at normal temperatures and pressures.

0 SEVERE HAZARD—Liquids and solids that can be ignited under all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with or without shock at all ambient temperatures, or, though unaffected by ambient temperature, are readily ignited under almost all conditions. This degree should include:

Liquids having a flash point below 79°F (23°C) and having a boiling point at or above 100°F (37°C) and those liquids having a flash point at or above 79°F (23°C) and having a boiling point at or above 100°F (37°C) (Class 1B and Class 1C flammable liquids).

1 SEVERE HAZARD—Materials which will readily or completely ignite at atmospheric pressure and normal ambient temperatures or which are readily dispersed in air, and which will burn readily. This degree should include:

Class 1B flammable liquids. Any liquid or gas which is a liquid under pressure and having a flash point below 100°F (37°C) and having a boiling point below 100°F (37°C). Class 1A flammable liquids. Materials which are not of their physical form at atmospheric pressure and which are readily dispersed in air, such as dusts of combustible solids and mists of flammable or combustible liquid droplets.

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M A T E R I A L S A F E T Y D A T A S H E E T	
[REDACTED] CORPORATION PLASTICS & ADDITIVES DIVISION THREE SKYLINE DRIVE HAWTHORNE, NEW YORK 10532	EMERGENCY PHONE NUMBERS: SAFETY/HEALTH: (914) 347-4700 AFTER HOURS : (800) 334-9481

SECTION I-IDENTITY INFORMATION

IDENTITY (TRADE NAME): [REDACTED]

FAMILY/CHEMICAL NAME:

EPOXIDE

PRODUCT TYPE:

MODIFIED LIQUID EPOXY RESIN

IMPORTANT:

* THIS MATERIAL WILL NOT BE SOLD FOR USE IN PRODUCTS *
* FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES OR *
* ABRADED SKIN, OR IMPLANTATION WITHIN THE HUMAN BODY, IS *
* SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF *
* SUCH POTENTIAL USES, CIBA-GEIGY CORPORATION IS NOT ABLE *
* TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR *
* SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES. *

HAZARD STATEMENT :

* THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN *
* PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD *
* COMMUNICATION STANDARD 29 CFR 1910.1200. *
* THIS PRODUCT IS CONSIDERED TO BE A HAZARDOUS *
* CHEMICAL UNDER THAT STANDARD. *

SECTION II-HAZARDOUS INGREDIENTS

SPECIFIC CHEMICAL NAME:

BISPHENOL A - TYPE EPOXY RESIN. CHEMICAL IDENTITY TRADE SECRET.

CAS #: NOT AVAILABLE

EXPOSURE LIMITS:

OSHA PEL: NOT ESTABLISHED

ACGIH TLV: NOT ESTABLISHED

XB 4122

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CARCINOGENICITY:

THIS CHEMICAL IS NOT CONSIDERED TO BE CARCINOGENIC
BY NTP, IARC, OR OSHA.

SECTION III-PHYSICAL DATA

APPEARANCE AND ODOR:
LOW VISCOSITY LIQUID RESIN
SOLUBILITY IN WATER:
INSOLUBLE.

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:
>200F.
EXTINGUISHING MEDIA:
CARBON DIOXIDE, FOAM, DRY CHEMICAL, WATER SPRAY.
FIRE FIGHTING PROCEDURES-SPECIAL:
USE SELF-CONTAINED BREATHING APPARATUS.
UNUSUAL FIRE AND EXPLOSION HAZARDS:
DECOMPOSITION AND COMBUSTION PRODUCTS MAY BE TOXIC.

SECTION V-REACTIVITY DATA

STABILITY:
STABLE.
CONDITIONS TO AVOID:
ELEVATED TEMPERATURES.
INCOMPATIBILITY:
STRONG OXIDIZING AGENTS.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE, CARBON DIOXIDE, ALDEHYDES.
HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR.

SECTION VI-HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:
DERMAL.
SKIN IRRITATION:
EXPECTED TO CAUSE IRRITATION.
EYE IRRITATION:
MAY CAUSE EYE IRRITATION.
SENSITIZATION:
POTENTIAL SENSITIZER.
OVEREXPOSURE EFFECTS:
IRRITATION. MAY CAUSE SENSITIZATION AND DERMATITIS.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
ALLERGY, ECZEMA OR SKIN CONDITIONS.
EMERGENCY AND FIRST AID PROCEDURES-EYES:
IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES.
EMERGENCY AND FIRST AID PROCEDURES-SKIN:

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PROMPTLY WASH THOROUGHLY WITH MILD SOAP AND WATER.
EMERGENCY AND FIRST AID PROCEDURES-INGESTION:
IF CONSCIOUS, GIVE LARGE QUANTITIES OF WATER.
INDUCE VOMITING. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-INHALATION:
REMOVE TO FRESH AIR. GIVE OXYGEN IF BREATHING IS DIFFICULT.
EMERGENCY AND FIRST AID PROCEDURES-OTHER:
PROMPTLY REMOVE WET CONTAMINATED NON-IMPERVIOUS CLOTHING.
WASH BEFORE REUSE.

SECTION VII-SPILL OR LEAK PROCEDURES

SPILL PROCEDURES:
AVOID ALL PERSONAL CONTACT. TAKE UP WITH ABSORBENT
MATERIAL. SHOVEL INTO CLOSABLE CONTAINERS. FLUSH
CONTAMINATED AREA WITH WATER.
WASTE DISPOSAL METHODS:
DISPOSE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL
REGULATIONS.

SECTION VIII-SPECIAL PROTECTION INFORMATION

VENTILATION:
GOOD GENERAL MECHANICAL VENTILATION AND LOCAL EXHAUST.
PROTECTIVE GLOVES:
WEAR IMPERVIOUS GLOVES.
EYE PROTECTION:
WEAR SPLASH-PROOF CHEMICAL GOGGLES.
RESPIRATORY PROTECTION:
USE NIOSH APPROVED RESPIRATOR SUITABLE FOR ORGANIC
VAPORS, IF REQUIRED.
OTHER PROTECTIVE EQUIPMENT:
WEAR APPROPRIATE EQUIPMENT TO PREVENT PROBABILITY OF SKIN
OR EYE CONTACT.

SECTION IX-SPECIAL PRECAUTIONS

HANDLING, SHIPPING AND STORING PRECAUTIONS:
CAUTION! THE TOXICOLOGICAL PROPERTIES OF THIS COMPOUND HAVE
NOT BEEN FULLY INVESTIGATED.
AVOID ALL CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID BREATHING MISTS OR VAPOR. DO NOT TASTE OR SWALLOW.
WASH THOROUGHLY AFTER HANDLING, AND BEFORE EATING, DRINKING
OR SMOKING.
KEEP CONTAINERS CLOSED WHEN NOT IN USE AND DURING TRANSPORT.
USE WITH ADEQUATE VENTILATION.
FOR INDUSTRIAL USE ONLY.

SECTION X- REGULATORY INFORMATION

DOT CLASS:
NOT REGULATED.
RCRA STATUS:

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NOT A HAZARDOUS WASTE UNDER RCRA (40 CFR 261),
CERCLA STATUS:
NOT LISTED.
TSCA INVENTORY STATUS:
CHEMICAL COMPONENTS LISTED ON TSCA INVENTORY.

ISSUE DATE: 11/26/86 REVISION: 01C
FOR FURTHER INFORMATION, PLEASE CONTACT: DR. JONAS WEISS

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